05 19 21 44	LMP	Okay. We'll get the navigator squared away here in just a minute.
05 19 21 51	CMP	Good morning, Captain.
05 19 21 53	CC	Good morning, sir.
05 19 21 57	CMP	This will be a piece of stew out of a deep sleep. Okay, stand by one.
05 19 22 17	CMP	Trunnion mechanical CDU looks like it's reading about 1/100.
05 19 22 25	CC	Roger.
05 19 22 52	CMP	And the shaft mechanical CDU looks like it is reading about 4/100 below zero, which would be about 364. Yes.
05 19 23 12	CC	Understand, Jim. That is 4/100 below zero on that shaft; is that affirm?
05 19 23 17	CMP	Yes. Stand by one. About 35996 on the shaft.
05 19 23 27	CC	Okay. Thank you. You can go ahead with P52 now.
05 19 23 35	CMP	Okay.
05 19 25 36	LMP	I always said he did better in his sleep.
05 19 26 28	CC	Apollo 8, Houston.
05 19 26 32	LMP	Go ahead, Houston.
05 19 26 34	CC	Okay. It looks like we're getting down on the service module RCS to the place where we ought to go ahead and activate the secondary service module RCS propellant.
05 19 26 48	LMP	Okay. Stand by.
05 19 28 30	CC	Apollo 8, Houston.

05 19 28 34	LMP	Go ahead.
05 19 28 36	CC	Okay. We've got a new PTC attitude. For the pitch 180, and the yaw 315.
05 19 28 45	LMP	Roger. Yaw 315.
05 19 28 48	CC	Roger. And pitch 180.
05 19 28 52	LMP	Okay.
05 19 28 57	LMP	Can't you pick one a little further away?
05 19 29 02	CC	Not in our normal sphere.
05 19 29 48	CMP	Ken, this is Jim.
05 19 29 51	CC	Go ahead.
05 19 29 52	CMP	Aren't we still a little high on the quantity side to activate the secondary?
05 19 30 01	CC	Negative. We have quad Bravo and quad Delta which are getting right down, according to the calculated numbers, next to where we ought to be activating them. The numbers you are reading are going to be a little bit high, but the computer data on the ground shows that you have about 134 pounds in Bravo and Delta, and about 130 pounds is where you ought to be on the secondary.
05 19 30 33	CMP	Okay. Roger. We will activate the secondary and turn off the primary.
05 19 30 40	CC	Okay. It's just to keep you from running one of them up.
05 19 30 44	CMP	Roger.

05 19 31 54	CMP	Secondary activation.
05 19 31 57	CC	Roger.

END OF TAPE

05 20 28 11	CDR	Houston, Apollo 8.
05 20 28 14	CC	Go ahead.
05 20 28 17	CDR	Ken, on this maneuver, MCC 7, are you going to - are we going to burn the PAD data that we got some time ago, or is there n few maneuver coming up, or what's going on in that regard?
05 20 28 35	CC	Okay, Apollo 8. If required, we'll give you a new one. Right now, we are looking at not making a maneuver burn at all.
05 20 28 46	CDR	You say we may not even have another one now?
05 20 28 48	CC	That's right.
05 20 29 04	CDR	Okay. You're the boss.
05 20 31 03	CC	Apollo 8, Houston.
05 20 32 57	CC	Apollo 8, Houston.
05 20 33 11	CC	Apollo 8, Houston. Could you try another OMNI?
05 20 33 37	CC	Apollo 8, Houston. Try another OMNI, please.
05 20 34 22	CC	Apollo 8, Houston.
05 20 35 47	CC	Apollo 8, Houston.
05 20 35 50	CDR	Go ahead, Houston. Apollo 8.
05 20 35 52	CC	Okay. Read you loud and clear now. Just wanted to remind you that in the event of a loss of COMM, we don't want you to burn MCC 7. Your present entry PAD is good. We'll be updating your landing points at the same time that you would have gotten MCC 7, and I'd like to have a crew status report from you when it's convenient.

05 20 36 38	CDR	Okay, Ken. I understand. If we would lose COMM, you do not want us to burn MCC 7, just go ahead and use the entry PAD you've given us?
05 20 36 46	CC	That's affirmative. You'll be within 0.06 degrees of your entry angle target line.
05 20 36 54	CDR	Alright. The crew status is everybody has gotten real good rest last night, and everybody is in good shape. Jim is just waking up, and Bill is starting the initial stowage, and we all feel very well.
05 20 37 12	CC	Okay.
05 20 37 17	CC	Okay. And we'd like to - guess we need a PRD reading from you. And we'll be needing one in the neighborhood of 145-hour period, somewhere when it's convenient in there again.
05 20 45 20	CDR	Houston, Apollo 8.
05 20 45 24	CC	Go ahead, 8.
05 20 45 41	CC	Apollo 8, Apollo 8, Houston. Go ahead.
05 20 45 45	CDR	Roger. Could you give us cur range - correction, our velocity and range from the earth now?
05 20 45 50	CC	Stand by.
05 20 46 59	CC	Apollo 8, Apollo 8, Houston. At time 51, your velocity will be 9526, altitude 42946. Over.
05 20 47 14	CDR	Thank you.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

141:33 05 21 33 43	CC	Apollo 8, Houston. You call?
05 21 34 17	CC	Apollo 8, Apollo 8. Did you call?
05 21 34 22	CDR	Negative, this is Apollo 8. We did not call you.
05 21 34 25	CC	Okay. Thank you.
05 21 34 29	CDR	Roger.
05 21 41 31	CC	Apollo 8, Houston.
05 21 41 34	CDR	Go ahead, Houston. Apollo 8.
05 21 41 37	CC	Okay. I've got some weather and recovery force status and a couple of last minute items to run down any time it is convenient for you.
05 21 41 47	CDR	Alright. It's convenient right now, any time.
05 21 41 50	CC	Okay. For the mid-Pacific, the general condition is good. You can expect cloud bases 2000 foot scattered, visibility 10 miles, wind 070 at 12, wave heights 4 feet, altimeter 2974. Sunrise will be 17:10 Zulu, and first light 16:49 Zulu. The recovery forces: ship will be Yorktown; the aircraft will be Airboss number 1 and 2, and Recoveries 1, 2, and 3. The estimated time to a target point: the ship is - Yorktown is on the target point, Airboss aircraft 15 minutes and will be on-scene commander. Recoveries 1, 2, and 3 are SH3 Alfas, and they go with the Yorktown, so they are at the target point. All of them have swimmers aboard. If the recovery aircraft do not hear from the spacecraft, they will go ahead and

put swimmers in the water, and if you are in good shape and give them a call, then they will hold off on dropping swimmers until sunrise.

05 21 43 45 CDR Roger. Say again the sunrise and first light time for me, would you, please?

05 21 43 53 CC I say again, 8.

05 21 44 23 CC Apollo 8, Houston. Notice the rather large middle gimbal angle. Over.

05 21 44 32 CDR Thank you.

05 21 44 38 CDR Would you say again the daylight time, please, sunrise, and first light.

05 21 44 44 CC Okay. Sunrise is 17:10 Zulu, and first light is 16:49 Zulu.

05 21 45 01 CDR Thank you.

05 21 46 05 CC Okay. Looking over the weather I gave you was - the 2000 foot scattered at the target point may have a 6000 foot broken layer above that. At the MAX lift point, you will have about the same thing, and altimeter is the same down the range. As you go further to the east, the weather should improve slightly; there is no problem with thunderstorms or rain showers in any of your recovery area.

05 21 46 42 CDR Very good; thank you.

05 21 46 51 CC The items that we still need will be a PRD reading as late as you can do it conveniently prior to a final stowage. And we don't have any numbers

on the last crew sleep period. I'd like to verify that the secondary RCS was activated on all four quads. And I have about five comments on the entry checklist procedures to verify.

05 21 47 24 CDR It was activated on all four quads; that's correct. Our final stowage is completed. We'll read out the PRD's for you now.

05 21 47 35 CC Alright. Thank you.

05 21 47 40 CDR The LMP's reads 0.64; I believe it's been that way throughout the flight. The CMP's reads 0.11, that's 1.11.

05 21 47 58 CC Roger.

05 21 48 02 CDR Stand by a minute. Let me look at it closely. That's 0.11.

05 21 48 09 CC Roger. 0.11.

05 21 48 13 CDR And the one I ended up with reads 3.10.

05 21 48 18 CC Okay. Thank you.

05 21 48 37 CDR Okay. Go ahead, Ken. What else do you want to talk about?

05 21 48 41 CC Okay. To make everybody happy, we can use an estimate of the number of hours sleep the people got.

05 21 48 52 CDR Just a minute, I'll give you that; I forgot. Bill Anders got about 5 hours, and Jim Lovell got about five, and I got about five and a half or six.

05 21 49 09 CC Sounds good. Okay. We went through an exercise with the mockup on the preentry preparations, and

we noticed that in the LMP's checklist on page S-12, when you go to top off the repress bottles, I believe it is a misprint; it should read the PLSS fill valve rather than the REPRESS valve, and we should be going to the FILL position as opposed to going to ON.

05 21 49 47 CDR Roger. That's what we do.

05 21 49 51 CC Okay. And on - go ahead.

05 21 50 01 CDR Go ahead. We agree that's what we do.

05 21 50 04 CC Okay. On page E-7 of the entry checklist and under step 34, as long as you have panel 382 open, that's a convenient time to go ahead and have the evaporator water controls, both primary and secondary, to AUTO, and the suit heat exchanger for the secondary glycol to FLOW.

05 21 50 27 CDR Those items are already accomplished.

05 21 50 29 CC Very good. On page E-9, when you are getting ready to transfer the RCS to the command module position, if you want to avoid having the engines fire as a result of attitude correction, you might want to take the manual attitude switches to ACCEL COMMAND or MINIMAL IMPULSE. And again on E-9 Alfa at step 41 Bravo, if you want to go back to attitude hold, bring your manual attitude switches back to RATE.

05 21 51 13 CDR What was that last step?

05 21 51 15 CC Step 41 Bravo on page E-9 Alfa. It's if you decide to use either MINIMAL IMPULSE or ACCEL COMMAND of

		page E-9, step 41 Bravo would be a good place to go back to RATE COMMAND.
05 21 51 31	CDR	Okay. We do a purge or - -
05 21 51 35	CC	Okay, fine. And - -
05 21 51 39	CDR	I didn't put all those control configurations changes on the checklist, but that's exactly whta we did, used MINIMUM IMPULSE.
05 21 51 47	CC	Okay. Real fine.
05 22 00 51	CDR	Houston, Apollo 8.
05 22 00 54	CC	Go ahead, 8.
05 22 01 07	CC	Apollo 8, Apollo 8. Go ahead.
05 22 01 11	CDR	I'd like to confirm one item on the PAD message, please.
05 22 01 15	CC	Roger.
05 22 01 17	CDR	Time to retro-drogues, reference you last time to drogues, please.
05 22 01 28	CC	Okay. I'll check that one out.
05 22 01 31	CDR	And also, Ken, we are going to turn on our VHF now, about 4 hours before entry.
05 22 01 37	CC	Real fine. Thank you. I'll let you know when we pick it up.
05 22 01 41	CDR	A Simplex.
05 22 01 42	CC	Affirm.
05 22 17 33	CC	Apollo 8, Houston.
05 22 17 35	CDR	Go ahead, Houston.
05 22 17 37	CC	Okay. We have checked into your drogue time, and the number of 08:16 on your entry PAD is

correct. We'll be giving you an updated entry PAD on the scheduled time of 143:30. At the same time, we'll be giving you an update of your state vectors for the LM and CSM. The midcourse correction number 7 was less than seven-tenths foot per second, and we will not execute it. You have a P52 scheduled at 143:30 which is not required. It's your option. However, if you decide to delete the P52, the CMC self-check and DSKY condition light test are still requirements. Over.

05 22 18 32	CDR	What do you mean, they are still requirements? We weren't planning to do the CMC self-test.
05 22 18 53	CDR	On that DSKY check ...
05 22 21 07	CC	Apollo 8, Houston. That's my mistake on CMC self-check and DSKY condition light. That's an optional test. Over.
05 22 21 16	CDR	That's what we thought, Ken. Gosh, if that's been working perfectly for 6 days, I don't see any reason to test it.
05 22 21 24	CC	I agree.
05 22 21 26	CDR	Thank you.
05 22 21 36	CMP	Morning, Ken. How's Houston this morning?
05 22 21 39	CC	Just fine. Nice and balmy.
05 22 21 44	CMP	Good.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

142:51

05 22 51 28	LMP	Houston, Apollo 8. Over.
05 22 51 31	CC	Go ahead, Apollo 8.
05 22 51 45	CC	Apollo 8, go ahead.
05 22 51 49	LMP	I am just - It is my understanding that we are to bring up the secondary loop at 1 hour prior to SEP, isn't that right?
05 22 51 54	CC	That is affirmative, about page Echo 9.
05 22 52 10	LMP	Okay.
05 22 52 16	CC	And Bill, ... suggested if we have the water boiler going on the primary loop, that you - you might wait about 5 minutes or so before you initiate the secondary loop.
05 22 52 38	LMP	Wait 5 minutes from what? From the time the primary loop starts or from 1 hour?
05 22 52 43	CC	From the time the primary loop starts; this will give you a check to see if it had a chance to dry out or not.
05 22 53 04	LMP	Oh, I am with you. Okay.
05 22 53 09	CC	And for your information, we already have a VHF downlink. It's poor quality, but we do have contact.
05 22 53 22	LMP	Okay. We haven't turned anything over to VHF yet.
05 22 53 25	CC	Okay.
05 22 53 27	LMP	We tried to call you on the VHF though, Ken.
05 22 53 30	CC	Roger. I say, the quality is pretty poor; they may not be able to understand you.

05 22 53 36	LMP	Roger.
05 22 56 59	CDR	Houston, Apollo 8. Over.
05 22 57 01	CC	Go ahead, Apollo 8.
05 22 57 14	CC	Apollo 8, Houston. Go ahead.
05 22 57 17	LMP	Ken, we got two things going here which make this suit heat exchanger flow a little different. One of them is we are not doing a coldsoak, and the other one is we are powering down the secondary loop prior to SEP. And I wonder if it is a good idea to have the suit heat exchanger only on a secondary loop in that case. And plus the fact that we haven't got any cabin heat exchanger.
05 22 57 45	CC	I don't think that was the intent, Bill. What they had in mind, we have the suit heat exchanger on both loops; and if they got too cold, you could use the panel switching to shut down the primary loop through the heat exchanger. But in any event, you would always have something going to the suit heat exchanger. I recognize that we are going to be shutting down the secondary heat exchanger pre-SEP and then turning it back on prior to entry, but the idea was to have both primary and secondary loops on the suit heat exchanger simultaneously.
05 22 58 24	LMP	Yes, my checklist doesn't reflect that. I think that's a good idea because we are a little suspect of our cabin fans and don't plan to use them.

05 22 58 31	CC	Roger.
05 23 01 54	LMP	Houston, Apollo 8. Over.
05 22 01 58	CC	Go ahead, 8.
05 22 02 08	CC	Apollo 8, Apollo 8. Go ahead.
05 22 02 12	LMP	Roger. What's Rod's estimate of our postseparation main bus voltage?
05 23 12 41	CC	Apollo 8, Houston. We will be making a handover from Carnarvon to Honeysuckle at 15.
05 23 12 50	CDR	Roger.
05 23 16 16	LMP	Houston, Apollo 8. Over.
05 23 16 19	CC	Apollo 8, go ahead.
05 23 16 24	LMP	I am still a little bit confused on that - on this activating the secondary loop. You indicated inactivating it at 1 hour or 5 minutes after the primary evaporator comes on the line. My checklist shows that the primary evaporator probably won't come on the line until we bypass the radiators. Have you got something else in mind I don't know about?
05 23 16 56	CC	Okay, Bill. We passed up an update some time back on page E-9 step 38 right at the beginning, and you have got a final GET drift check. And between there and the step 39 where it says terminate CM RCS preheat, that was the place we wanted to activate the primary loop by putting the glycol evaporator water switch to AUTO and the glycol evaporator steam pressure to AUTO.

05 23 17 41	LMP	Roger. I don't expect it to boil, though. Do you?
05 23 17 45	CC	Okay, Bill. We are hoping that it will there. It looks like we will have had a stable attitude for sometime, and we anticipate that it will be warm enough to make it boil. That is the reason it's suggested if it is boiling, that you wait. If it isn't, go ahead and turn on the secondary loop.
05 23 18 04	LMP	Okay. Well, that's where I was confused. I am waking up. Thank you.
05 23 18 08	CC	Yes, sir.
05 23 20 06	CC	Apollo 8, Houston.
05 23 20 09	LMP	Go ahead, Houston.
05 23 20 11	CC	Okay, Apollo 8. We would like to update your LM state vector, CSM state vector, and target point. If it is convenient now, why, we will go ahead and do that if you will go to POO and ACCEPT.
05 23 20 27	LMP	Roger. POO and ACCEPT.
05 23 29 20	CC	Apollo 8, Houston.
05 23 29 22	CDR	Go ahead, Houston. Apollo 8.
05 23 29 25	CC	Okay. The loads are in and verified, and the computer is yours.
05 23 29 29	LMP	Okay.
05 23 29 30	CC	You can take it back to BLOCK, and for Bill's information, latest guess from the main bus post-SEP voltage to 27.5
05 23 29 41	LMP	Guess! You mean the EECOM's are guessing?

05 23 29 57	LMP	At least, they are honest for a change.
05 23 30 02	CC	That is more than you can say for the computers.
05 23 30 06	LMP	Or the crew.
05 23 36 40	CC	Apollo 8, Houston.
05 23 37 00	CC	Apollo 8, Houston.
05 23 37 03	LMP	Go ahead, Houston. Apollo 8.
05 23 37 05	CC	Okay, 8. We have an entry PAD for you.
05 23 37 10	LMP	Good. Just a minute.
05 23 37 33	LMP	Ready to copy, Houston.
05 23 37 38	CC	Okay. This will be the mid-Pacific, 357 152 359 146 29 00 268, plus 0813, minus 16503 065 36221 645 12122 36301 14646 14 0028. The next block is November Alfa: D_0 400 02 12 0025 0334 08 14 16 0590 312; Zeta Persei, up 165, right 34, up. Use nonexit EMS pattern, GDC align; primary star Sirius, secondary Rigel, roll 308, pitch 209, yaw 357; this entry will not involve P65. Over.
05 23 40 25	CMP	Houston, Apollo 8. Entry PAD as follows: mid-Pacific, 357 152 359 146 2900 268 plus 0813 minus 16503 065 36221 645 12122 36301 14646 14 0028, next block not applicable, 400 0212 0025 0334 0814 16059 312, Zeta Persei, up 165, right 35 up, use nonexit EMS pattern, backup alignment; Sirius, Rigel, roll 308, pitch 209, yaw 357, and we won't need P65.

05 23 41 37	CC	Okay, Apollo 8. I would like to verify sextant star shaft 0590, and the boresight star.
05 23 41 49	CMP	Roger.
05 23 41 50	CC	The last one is right 34. Over.
05 23 41 56	CMP	Roger. Boresight star is right 34. And I have the sextant shaft; that's 0590.
05 23 42 03	CC	That's correct, Apollo 8.
05 23 59 37	CC	Apollo 8, Houston.
05 23 59 50	CC	Apollo 8, Apollo 8, Houston.
05 23 59 56	CMP	Go ahead, Houston.
05 23 59 58	CC	Okay, Apollo 8. Can you tell us if you've done anything with your potable water? We've noticed our readout has gone from 100 percent down to 56 in the last couple of minutes.
06 00 00 17	CMP	We're reading about 50 percent right now.
06 00 00 22	CC	Roger. That correlates with what we see. Have you done anything to change configuration? Over.
06 00 00 44	CMP	Yes, we noticed the venting here, too, Houston.
06 00 01 10	CC	Jim, did you mean you could visually see it?
06 00 01 14	CMP	Yes, we're - oh, stand by, Ken. Bill just dumped urine, so that might have been urine we were seeing.
06 00 01 45	CMP	Bill just shut the potable inlet, Ken.
06 00 01 48	CC	Okay. Thank you.
06 00 04 44	CMP	Houston, Apollo 8.
06 00 04 47	CC	Go ahead, 8.
06 00 04 58	CC	Apollo 8, Apollo 8, go ahead.

06 00 05 01	CMP	Roger, Houston. We're still showing about 52 percent, and we had our switch on waste so we don't know whether it dropped from a higher value or not. Has yours been stabilized now?
06 00 05 15	CC	That's affirmative; ours has stabilized now. It was reading full just a few minutes ago.
06 00 05 25	CMP	Roger. I don't think - we can't account for any sudden drop in water.
06 00 05 31	CC	Okay. We looked in the malfunction procedures, and number 28 doesn't reveal anything very startling.
06 00 05 42	CMP	Bill is looking there now.
06 00 08 53	LMP	Houston, Apollo 8. Over.
06 00 08 57	CC	Go ahead, 8.
06 00 09 00	LMP	Okay. I'm looking at malfunction 28, and it takes you to box 6, but I don't really think that's the problem because the waste tank quantity hasn't changed any. Over.
06 00 09 11	CC	Okay. I concur. We're watching the same thing.
06 00 09 15	LMP	Look, we don't care about the potable tank, but we do about the waste tank, so just in case there is a problem somewhere, I'm going to shut the potable tank off and leave the waste tank inlet valve open. How does that sound to you?
06 00 09 29	CC	Stand by. Okay, 8. We concur.
06 00 09 37	LMP	If I see any water floating around, I'll give you another call.

06 00 09 40	CC	Roger. Thank you.
06 00 18 30	CC	Apollo 8, Houston. Radio check.
06 00 18 47	CC	Apollo 8, Apollo 8. Radio check.
06 00 18 51	CMP	Read you loud and clear.
06 00 18 53	CC	Roger. We had a momentary loss of COMM on the ground then. Read you loud and clear.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

06 00 25 28	CC	Apollo 8, Houston.
06 00 27 13	CDR	Houston, Apollo 8. Did you call?
06 00 27 17	CC	Apollo 8, Houston. You are loud and clear. We've taken a look at this water - -
06 00 27 23	CDR	Houston, Apollo 8.
06 00 27 27	CC	Apollo 8, Apollo 8, Houston. Read you loud and clear. We have taken a look at your potable water quantity problem, and it appears to be a transducer problem. Suggest that you leave the potable tank isolated. You have sufficient water in the waste tank to continue the entry. Over.
06 00 27 48	CDR	Roger. Thank you, Houston.
06 00 27 58	LMP	Does that mean we're GO for entry?
06 00 28 21	CDR	Houston, Apollo 8.
06 00 28 24	CC	Apollo 8, Apollo 8, go ahead.
06 00 28 27	CDR	Roger. Is our thermal stability good enough we can leave the PTC attitude and go to entry gimbal angles now?
06 00 32 03	CDR	Houston, how do you read? Apollo 8.
06 00 32 06	CC	Read you loud and clear, Apollo 8, and we're checking on the PTC problem now.
06 00 32 19	CC	Apollo 8, Houston. You are cleared with entry attitude at this time.
06 00 32 23	CDR	Okay. Fine. Thank you.
06 00 46 22	CC	Houston voice. Go to voice 925.
06 00 56 46	LMP	Houston, Apollo 8. Over.

06 00 56 51	CC	Apollo 8, loud and clear. Go.
06 00 57 00	CC	Apollo 8, Apollo 8, go ahead.
06 00 57 05	LMP	Roger. We have completed the checklist down to the 1-hour point, and we'll stand by for 1 hour.
06 00 57 14	CC	Roger.
06 00 57 44	CC	Apollo 8, Apollo 8, Houston.
06 00 57 49	CDR	Go ahead, Houston.
06 00 57 52	CC	Just for information, did you folks end up having to use any command module RCS heaters?
06 00 57 59	CDR	Negative. All our indicators are pegged either high or at 5 volt.
06 00 58 06	CC	Okay. Thank you.
06 00 58 28	CT	Carnarvon, network GOSS conference voice check. How do you read?
06 00 58 36	CT	Network, Carnarvon. Read you weak but clear.
06 00 58 41	CT	Roger, Carnarvon. I read you loud and clear.
06 00 58 44	CT	You are loud and clear now. Thank you.
06 00 58 57	CC	Apollo 8, Houston. Stand by for hand over to Carnarvon.
06 00 59 02	CDR	Roger.
06 01 02 05	CC	Apollo 8, Houston.
06 01 02 09	CDR	Go ahead.
06 01 02 16	CMP	Go ahead, Houston.
06 01 02 19	CC	Okay, Apollo 8. If you will go to POO and ACCEPT, we would like to update your LM and CSM state vectors. Over.

06 01 02 27	CDR	Roger.
06 01 06 18	CC	Apollo 8, Houston. State vector load is complete. Verify the computer is yours.
06 01 06 35	CC	Apollo 8, Apollo 8, Houston. State vector load is complete; the computer is yours.
06 01 06 47	CDR	Roger, Houston. We are going to BLOCK.
06 01 06 50	CC	Roger.
06 01 10 54	CC	Apollo 8, Houston.
06 01 10 58	CDR	Go ahead, Houston.
06 01 11 00	CC	Okay. Two fast items: number one, it has been suggested that since Marezine takes some time to take effect, you might consider whether you would be interested in taking some now. And I have an entry PAD which has some very small updates to go on it if you would like to copy that.
06 01 11 22	CDR	Okay. Stand by. Let me get out the entry PAD.
06 01 11 38	CMP	Okay. Go ahead with the entry PAD, Houston.
06 01 11 42	CC	Okay. We are still going to the mid-Pacific, 357 152 359 146 2913 267, plus 0813, minus 16503 066 36221 647 12166 36301 14646 13 0028, the next block is November Alfa, V_0 400 0210 0025 0335 0816 160590 312; Zeta Persei, up 165, right 34, up nonexit EMS pattern; Sirius and Rigel, roll 308, pitch 209, yaw 357, no P65 involved. Over.
06 01 14 11	CMP	Roger, Houston. Entry PAD as follows: mid-Pacific, 357 152 359 146 2913 267, plus 0813, minus 16503 066 36221 647 12166 36301 14646 13 0028, NA, 400

		0210 0025 0335 0816 160590 312, Zeta Persei, up 165, right 34, up. Use nonexit EMS pattern; Sirius, Rigel, 308, 209, 357, no P65.
06 01 15 11	CC	That's correct, Apollo 8.
06 01 15 46	CC	Apollo 8, Houston. You are clear to initiate cabin coldsoak at your discretion. Over.
06 01 15 52	CMP	Roger, Houston. We're starting that now.
06 01 19 44	CC	... your mike is stuck.
06 01 19 46	CDR	You have a hot mike, Houston.
06 01 19 49	CC	Roger.
06 01 23 13	LMP	Houston, Apollo 8. Over.
06 01 23 17	CC	Go ahead, 8.
06 01 23 19	LMP	Okay. It doesn't appear that we are going to be able to trigger the primary evaps, so I'm going to go ahead and start up the secondary loop.
06 01 23 34	CC	Okay, Apollo 8. We concur.
06 01 26 43	CDR	Houston, Apollo 8.
06 01 26 46	CC	Go ahead, 8.
06 01 26 58	CC	Apollo 8, Apollo 8, go ahead.
06 01 27 01	CDR	Roger. Since we're going as smoothly as we are here - we've got good COMM - let's start this pyro circuit check about 10 minutes early. What do you say?
06 01 27 25	CC	Apollo 8, Apollo 8. We can conduct the pyro check just any time.
06 01 27 31	CDR	All right. Why don't we do it here just momentarily then?

06 01 27 36	CC	Roger.
06 01 27 38	CDR	We'll give you a call when we're ready.
06 01 27 40	CC	Roger.
06 01 27 58	CDR	Houston, we are ready to proceed with the pyro circuit check.
06 01 28 04	CC	Roger. Go ahead.
06 01 31 07	CDR	MSFN, are you monitoring the sequential test now?
06 01 31 15	CDR	Houston, Apollo 8.
06 01 31 23	CC	Apollo 8, Apollo 8. That's affirmative.
06 01 31 38	CDR	Hello, Houston. Apollo 8.
06 01 31 43	CC	Apollo 8, Apollo 8. Loud and clear. Affirmative we are monitoring.
06 01 31 48	CDR	Okay.
06 01 32 07	LMP	Standing by for GO and PYRO ARM.
06 01 32 13	CC	Apollo 8, Apollo 8. You have a GO.
06 01 32 17	LMP	Roger.
06 01 41 41	CDR	Houston, this is Apollo 8. How is your tracking looking?
06 01 41 47	CC	Looking great.
06 01 41 50	CDR	Okay. Everything went fine with the check. We are all armed and ready to go here.
06 01 41 55	CC	Okay. If you have done everything else, how about let's make a VHF check.
06 01 42 02	CDR	Okay. I'll turn off my S-band; the other two will be on S-band.
06 01 42 06	CC	Roger. I'll give you a count in just a second.

06 01 42 30	CC	Apollo 8, Houston. Simultaneous VHF and S-band. Over.
06 01 42 37	CDR	Roger. I'm not reading you on VHF.
06 01 42 40	CC	Roger. Stand by one.
06 01 43 31	CC	Apollo 8, Houston. Simultaneous VHF and S-band. Do you verify that you are on the left hand VHF antenna? Over.
06 01 42 48	LMP	We can verify the antenna, but we can't verify reading you on S-band or on VHF.
06 01 42 54	CC	Okay. We are receiving some downlink, although it is considered to be poor quality.
06 01 51 34	CC	Apollo 8, Houston. We'd like to try the right VHF antenna, if you have time.
06 01 51 45	LMP	We're - we're on right, Ken.
06 01 51 48	CC	Okay. This is a simultaneous VHF and S-band transmission: one, two, three, four, five. How do you read on VHF? Over.
06 01 51 59	CDR	Read you loud and clear.
06 01 52 03	CC	Understand that's on VHF. Is that affirm?
06 01 52 18	CDR	Houston, this is Apollo 8. I answered your call on VHF. Did you receive?
06 01 52 22	CC	Okay. It's not piped back here. MOKR'll have to check and see if they have it on the ground station.
06 01 52 28	CDR	You were loud and clear, Ken.
06 01 52 30	CC	Roger. Thank you.

06 01 52 37	CC	Okay, Apollo 8. We receive you loud and clear on VHF through Carnarvon.
06 01 52 45	CDR	Roger.
06 01 57 21	CC	Apollo 8, Houston. Stand by for handover from Carnarvon to Guam on the hour. We should have continuous contact except for the blackout period beginning at 146:51.
06 01 57 36	CDR	Roger.

END OF TAPE

APOLLO 8 AIR-TO-GROUND VOICE TRANSCRIPTION

(GOSS NET 1)

146:26

06 02 26 54	CMP	Houston, Apollo 8. Confirm GO for PYRO ARM.
06 02 26 57	CC	Apollo 8, Apollo 8, Houston. You are GO for PYRO ARM.
06 02 27 13	CC	Apollo 8, Apollo 8. You are GO for PYRO ARM. Everything is looking good.
06 02 27 18	LMP	Roger. Everything is looking good here, Ken.
06 02 29 10	CC	Apollo 8, Apollo 8. It appears that your primary evaporator may have dried out. If you get a chance, go ahead and give it a try to reservice. Over.
06 02 31 28	CC	Apollo 8, Apollo 8. Ground data indicates the primary evaporator may have dried out. If you have a chance, you might try reservicing. Over.
06 02 31 38	LMP	Roger.
06 02 32 51	CC	Apollo 8, Apollo 8. Your secondary loop looks good.
06 02 32 56	CMP	Roger, Houston.
06 02 39 20	CC	Apollo 8, Houston. Looking good; both primary and secondary loops look good.
06 02 39 52	CC	Apollo 8, through the Redstone. You're looking good; both primary and secondary loops are holding good.
06 02 40 26	CC	Apollo 8, Apollo 8, through Redstone. Over.
06 02 40 32	LMP	Go ahead, Houston. This is Apollo 8.
06 02 40 34	CC	Roger. Read you loud and clear. You're looking good.
06 02 40 39	CDR	Roger.

06 02 45 15	CC	Apollo 8, Houston. One minute to RRT.
06 02 45 20	CDR	Roger.
06 02 48 44	CDR	Good point, too.
06 02 49 15	CC	Apollo 8, Houston. Radio check.
06 02 49 43	CC	Apollo 8, Houston through Huntsville. Over.
06 02 51 32	CC	Apollo 8, Apollo 8, this is Houston through ARIA. Say again, 8.
06 02 51 47	CDR	Houston, Apollo 8. Over.
06 02 51 50	CC	Go ahead, Apollo 8. Read you broken and loud.
06 02 51 51	CDR	We've got a real fireball. It's looking good.
06 02 51 56	CC	Outstanding!
06 02 52 15	CDR	We are in real good shape, Houston.
06 02 52 17	CC	Real fine.
06 02 52 31	CC	Apollo 8, Houston. Yorktown has radar on you.
06 02 53 57	CC	Apollo 8, Houston.
06 02 53 60	CDR	Go ahead, Houston.
06 02 54 01	CC	If you get a chance, we'd like to have your DSKY readings before drogues.
06 02 54 04	CDR	Stand by.
06 02 54 08	CMP	Roger. DSKY reading plus four balls 7, plus two balls 812, minus 16522.
06 02 56 13	CDR	... This is Apollo 8. Over.
06 02 59 53	R3	The spacecraft is down to 1000.
06 02 59 58	YORK	Be ready for code 3.
06 03 01 40	R3	Yorktown, Rec 3. At this time, the command module is in the water. Over.